



PTO/SB/21 (04-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/005,534-Conf. #9272
	Filing Date	November 8, 2001
	First Named Inventor	Philip W. Eggleston
	Art Unit	3676
	Examiner Name	Enoch E. Peavey
Total Number of Pages in This Submission	Attorney Docket Number	06005/38302B

## ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input checked="" type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input checked="" type="checkbox"/> Petition to revive under 37 C.F.R. §1.137(a)	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)		
<input type="checkbox"/> Response to Missing Parts/Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		
<b>Remarks</b>		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	MARSHALL, GERSTEIN & BORUN LLP Roger A. Heppermann - 37,641
Signature	
Date	July 23, 2004

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV 457202258US, in an envelope addressed to: MS Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: July 23, 2004

Signature:

(Juan Quintero)



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# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 110.00

## Complete if Known

Application Number	10/005,534-Conf. #9272
Filing Date	November 8, 2001
First Named Inventor	Philip W. Eggleston
Examiner Name	Enoch E. Peavey
Art Unit	3676
Attorney Docket No.	06005/38302B

## METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit Account Number

13-2855

Deposit Account Name

MARSHALL, GERSTEIN & BORUN LLP

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) (\$ 0.00

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims			
Multiple Dependent			

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$ 0.00

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	110.00
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 110.00

## SUBMITTED BY

Name (Print/Type) Roger A. Heppermann

Registration No. (Attorney/Agent)

37,641

(Complete (if applicable))

Telephone (312) 474-6300

Signature

Date

July 23, 2004

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV 457202258US, in an envelope addressed to: MS Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: July 23, 2004

Signature:  (Juan Quintero)



07-26-04 #13 DAC\$

PTO/SB/61 (11-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED  
UNAVOIDABLY UNDER 37 CFR 1.137(a)**

Docket Number (Optional)  
06005/38302B

First Named Inventor: Philip W. Eggleston

Art Unit: 3676

Application Number: 10/005,534-Conf. #9272

Filed: November 8, 2001

Examiner: Enoch E. Peavey

Title: ROTARY VALVE APPARATUS

**RECEIVED**

**JUL 28 2004**

**OFFICE OF PETITIONS**

MS Petition  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

NOTE: If information or assistance is needed in completing this form, please contact  
Petitions Information at (703) 305-9382.

The above-identified application became abandoned for failure of the United States Patent and Trademark Office to acknowledge and consider applicant's timely and proper response to the Office action mailed on November 13, 2003. The date of abandonment is the day after the expiration date of the period set for reply in the Office notice or action plus any extensions of time actually obtained.

**APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION.**

NOTE: A grantable petition requires the following items:

- (1) Petition fee.
- (2) Reply and/or issue fee.
- (3) Terminal disclaimer with disclaimer fee – required for all utility and plant applications filed before June 8, 1995, and for all design applications; and
- (4) Adequate showing of the cause of unavoidable delay.

**1. Petition fee**

☐ Small entity – fee \$ \_\_\_\_\_ (37 CFR 1.17(l)). Applicant claims small entity status.  
See 37 CFR 1.27.

☒ Other than small entity – fee \$ 110.00 (37 CFR 1.17(l)).

**2. Reply and/or fee**

A. The reply and/or fee to the above-noted Office action in the form of

Response to Office Action of Nov. 13, 2003 (identify the type of reply):

- ☒ has been previously mailed with certificate of mailing on February 12, 2004.
- ☒ and another copy is enclosed herewith.

B. The issue fee of \$ \_\_\_\_\_

- ☐ has been filed previously on \_\_\_\_\_.
- ☐ is enclosed herewith.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV 457202258US, in an envelope addressed to: MS Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: July 23, 2004

Signature: Juan Quintero (Juan Quintero)

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED  
UNAVOIDABLY UNDER 37 CFR 1.137(a)****RECEIVED****JUL 28 2004****OFFICE OF PETITIONS**

## 3. Terminal disclaimer with disclaimer fee

- ☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.
- ☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ \_\_\_\_\_ for a small entity or \$ \_\_\_\_\_ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

## 4. An adequate showing of the cause of the delay, and that the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition under 37 CFR 1.137(a) was unavoidable, is enclosed.

July 23, 2004

Date

  
Signature

(312) 474-6300

Telephone Number

Roger A. Heppermann

Typed or printed name

37,641

Registration Number, if applicable

MARSHALL, GERSTEIN & BORUN LLP  
233 S. Wacker Drive, Suite 6300  
Sears Tower  
Chicago, Illinois 60606-6357

Address

Enclosure ☒ Fee Payment☒ A copy of the Response as mailed on February 12, 2004 (Exhibit A)☐ Terminal Disclaimer Form☐ Additional sheets containing statements establishing unavoidable delay☒

- 1) Copies of the as-filed acknowledgement postcard. (Exhibit B)
- 2) Copies of the as-filed Response and acknowledgement postcard transmitted by facsimile. (Exhibit C)
- 3) Copies of the Facsimile transmissions and facsimile acknowledgements. (Exhibit D)

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED  
UNAVOIDABLY UNDER 37 CFR 1.137(a)**

NOTE: The following showing of the cause of unavoidable delay must be signed by all applicants or by any other party who is presenting statements concerning the cause of delay.

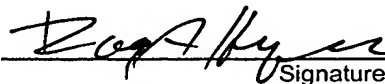
**RECEIVED**

JUL 28 2004

**OFFICE OF PETITIONS**

July 23, 2003

Date

  
Signature

37,641

Registration Number, if applicable

Roger A. Heppermann

Typed or printed name

(In the space provided below, please explain in detail the reasons for the delay in filing a proper reply.)

Applicant respectfully asserts that no delay occurred in filing a proper Response to the Office action mailed on November 13, 2003. In support of this assertion, applicant encloses a copy of the originally filed amendment dated February 12, 2004, which is within the three month statutory period, (attached as Exhibit A) and the acknowledgement postcard (attached as Exhibit B) indicating receipt of said amendment by the United States Patent and Trademark Office (USPTO) on February 17, 2004.

Applicant further encloses copies of the original amendment and acknowledgement postcard (attached as Exhibit C), and a facsimile transmittal and a facsimile transmittal receipt (attached as Exhibit D) indicating that the above-identified papers were re-submitted to the USPTO (per a telephonic request) on June 7, 2004 at 2:06 p.m. CST (the actual transmission occurred on June 8, 2004 at 9:04:57 a.m. CST).

For all of these reasons applicant asserts that the original amendment was timely filed, and subsequently misplaced by the USPTO, and the abandonment was unavoidable.

Applicant respectfully requests revival of U.S. Patent application No. 10/005,534.

(Please attach additional sheets if additional space is needed)

Exhibit A



PATENT  
06005/38302B

**IN THE UNITED STATES PATENT  
AND TRADEMARK OFFICE**

Applicant: Eggleston

Serial No.: 10/005,534

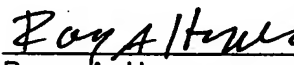
Filed: NOVEMBER 8, 2001

Title: ROTARY VALVE APPARATUS

Group Art Unit: 3676

Examiner: PEAHEY, ENOCH E.

) I hereby certify that this paper is being  
) deposited with the United States Postal  
) Service as first class mail, postage  
) prepaid, in an envelope addressed to:  
) Mail Stop Non Fee Amendment  
) Commissioner for Patents, P.O. Box  
) 1450, Alexandria, VA 22313-1450,  
) on February 12, 2004.

)   
) Roger A. Heppermann  
) Reg. No. 37,641  
) Attorney for Applicant

**AMENDMENT IN RESPONSE TO THE  
OFFICE ACTION DATED NOVEMBER 13, 2003**

Mail Stop Non Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Amendment is in response to the Office Action mailed on November 13, 2003.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this Amendment.

Remarks begins on page 10 of this Amendment.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A rotary valve comprising:  
a valve body;  
a seal structure, carried by said valve body [[, for forming an elliptical seating surface]], said seal structure including opposing first and second annular seal cartridge members and a resilient annular seal to form a seating surface wherein the first and second seal cartridge members form a cavity to receive said resilient annular seal such that said annular seal inwardly protrudes from said cavity, said cavity having an elliptical configuration to deform said resilient annular seal to an elliptical shape; [[and]]  
a shaft having a first longitudinal portion disposed externally of said valve, and a second longitudinal portion disposed internally of said valve;  
a disc operably connected to said second longitudinal portion and rotatably carried by said valve body [[and]], said disc having an elliptical periphery rotatable into and out of sealing engagement with said seating surface.
2. (Canceled)
3. (Canceled)
4. (Currently Amended) The rotary valve of Claim [[3]] 1 wherein:  
said annular seal member has a radially outer peripheral portion clamped between opposing portions of said first and second seal cartridge members.



5. (Original) The rotary valve of Claim 1 wherein:  
said cavity has an elliptical configuration, and  
  
said annular seal member is of a metal material and is resiliently  
deformable to said elliptical configuration in response to  
engagement by said elliptical periphery of said disc.
6. (Original) The rotary valve of Claim 1 wherein:  
said valve body has an interior, and  
said rotary valve further comprises abutting fixed geometry structures  
carried by said valve body and said disc and functioning to hold  
said disc in a precisely centered orientation within said interior of  
said valve body.
7. (Original) The rotary valve of Claim 6 wherein:  
said disc is rotatable relative to said valve body about an axis, and  
said abutting fixed geometry structures include:  
first and second guide structures spaced apart along said axis, and  
extending inwardly into said interior of said valve body, and  
a mounting structure carried by said disc and having oppositely  
facing surfaces spaced apart along said axis and abutting  
said a first and second guide structures.
8. (Original) The rotary valve of Claim 7 wherein:  
said valve body has an annular shape with diametrically opposite, parallel  
flat areas formed on the exterior periphery thereof and spaced a  
apart along said axis, said flat areas having openings extending  
radially therethrough and removably receiving said first and second  
guide structures, and  
said first and second guide structures have enlarged portions abutting said  
flat areas and preventing further movement of said first and second  
guide structures into said interior of said valve body.

9. (Original) The rotary valve of Claim 7 further comprising;  
a shaft rotatably locked to said disc, said shaft having a longitudinal  
portion rotatably extending through one of said first and second  
guide structures.
10. (Original) the rotary valve of Claim 7 wherein one of said first and second  
guide structures has a portion rotatably coupled to said mounting  
structure.
11. (Original) The rotary valve of Claim 1 further comprising:  
a shaft having a first longitudinal portion extending inwardly through said  
valve body and being rotationally locked to said disc, and a second  
longitudinal portion disposed externally of said valve body and  
being drivingly rotatable to cause a corresponding rotation of said  
disc about said axis, and  
an actuator support structure secured to the exterior of said valve a body  
and being connectable directly to an actuator useable to drivingly  
rotate said second longitudinal portion of said shaft.
12. (Original) The rotary valve of Claim 11 wherein said actuator support  
structure is of a one-piece construction and is removably secured to said  
valve body.

13. (Original) The rotary valve of Claim 12 wherein:

said valve body has a generally annular configuration with a circumferentially spaced pair of flat areas formed on the external a periphery of said valve body on opposite sides of said second longitudinal portion of said shaft, and  
said one-piece actuator support structure has a generally inverted U-shaped configuration with a spaced pair of leg portions with free end a portions removably secured to said flat areas of said valve body, and a closed outer end portion to which a valve actuator may be directly secured.

14. (Currently amended) A rotary valve comprising:

a valve body having an interior;  
a seal structure carried by said valve body and defining a seating surface;  
a disc carried within said valve body interior for rotation relative to said valve body about an axis and having a periphery rotatable into and out of sealing engagement with said seating surface; [[and]]  
a shaft having a first longitudinal portion rotationally locked to said disc,  
and a second longitudinal portion disposed externally of said valve  
body; and  
abutting fixed geometry structures carried by said valve body and said disc including first and second guide structures spaced apart along said axis and extending inwardly into said interior of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures such that said first longitudinal portion of said shaft rotatably extends through one of said first and second guide structures wherein said guide structures [[and functioning]] function to hold said disc in a precisely centered orientation within said interior of said valve body.

15. (Canceled)

16. (Currently Amended) The rotary valve of Claim ~~[[15]]~~ 14 wherein:  
said valve body has an annular shape with diametrically opposite, parallel  
flat areas formed on the exterior periphery thereof and spaced apart  
along said axis, said flat areas having openings extending radially  
therethrough and removably receiving said first and second guide  
structures, and  
said first and second guide structures have enlarged portions abutting said  
flat areas and preventing further movement of said first and second  
guide structures into said interior of said valve body.

17. (Canceled)

18. (Currently Amended) The rotary valve of Claim ~~[[15]]~~ 14 wherein one of  
said first and second guide structures has a portion rotatably coupled to  
said mounting structure.

19. (Currently Amended) A rotary valve comprising:
- a valve body;
  - a seal structure carried by said valve body and defining a seating a surface;
  - a disc rotatably carried by said valve body and having a periphery rotatable into and out of sealing engagement with said seating surface;
  - a shaft having a first longitudinal portion rotationally locked to said a disc, and a second longitudinal portion disposed externally of said valve a body and being drivingly rotatable to cause a corresponding rotation of said disc; [[and]]
  - abutting fixed geometry structures carried by said valve body and said disc including first and second guide structures spaced apart along said axis and extending inwardly into said interior of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures such that said first longitudinal portion of said shaft rotatably extends through one of said first and second guide structures wherein said guide structures function to hold said disc in a precisely centered orientation within said interior of said valve body; and
  - an actuator support structure secured to the exterior of said valve body and being connectable directly to an actuator useable to drivingly rotate said second longitudinal portion of said shaft.
20. (Original) The rotary valve of Claim 19 wherein said actuator support structure is of a one-piece construction.
21. (Original) The rotary valve of Claim 19 wherein said actuator support structure is removably secured to said valve body.

22. (Original) The rotary valve of Claim 21 wherein:  
said valve body has a generally annular configuration with a  
circumferentially spaced pair of flat areas formed on the external  
periphery of said valve body on opposite sides of said second  
longitudinal portion of said shaft, and  
said one-piece actuator support structure has a generally inverted U-  
shaped configuration with a spaced pair of leg portions with free  
end a portions removably secured to said flat areas of said valve  
body, and a closed outer end portion to which a valve actuator may  
be directly secured.
23. (Withdrawn) A method of constructing a seal cartridge for a rotary valve,  
said method comprising the steps of:  
providing a first seal cartridge member having a side transverse to and  
circumscribing a first axis;  
exerting and maintaining on said first seal cartridge member oppositely  
directed forces resiliently deforming it along a second axis  
transverse to said first axis;  
forming on said side of the resiliently deformed first seal cartridge member  
a circularly configured depression circumscribing said first axis;  
terminating said forces to permit the resiliently deformed first seal  
cartridge member to return to its original shape and thereby cause  
said circularly configured depression to assume an elliptical shape;  
and  
inserting an annular seal member in the elliptically shaped depression.
24. (Withdrawn) A seal cartridge constructed by the method of Claim 23.

25. (Withdrawn) The method of Claim 23 further comprising the steps of:  
providing a second seal cartridge member, and  
  
sandwiching said seal member between said first and second seal a  
cartridge members.
26. (Withdrawn) A seal cartridge constructed by the method of Claim 25.
27. (Withdrawn) The method of Claim 23 wherein:  
said annular seal member has a circular shape, and  
said inserting step is performed in a manner causing the seal member to  
be deformed to an elliptical shape within said depression.
28. (Withdrawn) A seal cartridge constructed by the method of Claim 27.
29. (Withdrawn) The method of Claim 27 wherein said step of inserting an  
annular seal member is performed using an annular seal member having  
an elastomeric body portion.
30. (Withdrawn) A seal cartridge constructed by the method of Claim 29.
31. (Withdrawn) The method of Claim 23 wherein said step of inserting an  
annular seal member is performed using an annular metal seal member.
32. (Withdrawn) A seal cartridge constructed by the method of Claim 31.

REMARKS

This Amendment responds to the Office Action dated November 13, 2003. Based upon the foregoing amendments and following comments, Applicant respectfully requests reconsideration and allowance of the pending claims.

To satisfy 37 C.F.R. §1.143, the Applicant provisionally elected for examination on the merits, with traverse, claims 1-22. Applicant asserted in response to the July 22, 2003 Office Action that the Examiner had not provided appropriate explanation regarding the separate classification of the original claims. In the present Office Action, the Examiner has attempted to rebut these assertions and Applicant's objections to the restriction requirement. The Examiner has further stated that there are no allowable generic or linking claims. Subsequently, claims 23-32 were withdrawn from consideration as being drawn to a non-elected species. Accordingly, claims 1-22 are under consideration.

By way of this amendment, claims 2, 3, 15, and 17 are canceled. The subject matter of claims 2 and 3 is incorporated into independent claim 1. The subject matter of claim 15 and 17 is incorporated into independent claim 14. Further, claims 4 and 5 are amended to properly depend from claim 1 and claims 16 and 18 are amended to properly depend from claim 14. Finally, independent claim 19 is amended to better define Applicant's invention. Thus, claims 1, 4-14, 16, and 18-22 are presently pending and at issue in this application. No new matter has been added.

The cancellation of claims 2, 3, 15, and 17 should in no way be construed as an acquiescence to any of the rejections stated in the Office Action. These claims are cancelled solely to expedite the prosecution of the present application. Additionally, Applicant does not intend to abandon the scope of the non-elected claims as originally filed or as withdrawn by the Examiner in the present Office Action, but may pursue the remaining claims, either by petition for further review or in a divisional application.



**I. 35 U.S.C. §112 REJECTION**

Claim 5 stands rejected under 35 U.S.C. §112 as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the pending Office Action alleges that there is insufficient antecedent basis for the limitation "said cavity" in line 2 of the claim 5. Claim 1, from which claim 5 depends, is amended to provide proper antecedent basis for the limitation "said cavity" within claim 5. Applicant respectfully submits, therefore, that claim 5 is now in proper form and requests reconsideration and withdrawal of the rejection.

**II. 35 U.S.C. §102(b) REJECTIONS**

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as anticipated by Hubertson (U.S. Patent No. 4,286,769.) Applicant respectfully traverses these rejections.

As an initial matter, Applicant is appreciative of the recognition by the Examiner for his indication of the allowability of claims 3, 4, 8, 9, 16, and 17 if rewritten according to the recommendations stated in the Office Action. The Office Actions states "the prior art of record does not disclose or suggest deforming the annular seal into an elliptical seal by placing it into [an] elliptical cavity of a seal structure...." In accordance with the Examiner's recommendations, independent claim 1 is amended to include the limitations of original dependent claims 2 and 3. Claims 2 and 3 are canceled.

As a result, independent claim 1 (which is actually the same in scope as original claim 3) now recites a rotary valve containing a seal structure including *opposing first and second annular seal cartridge members and a resilient annular seal* such that the cavity formed by opposing first and second annular seal cartridge members provides *an elliptical configuration to deform said resilient annular seal to an elliptical shape* and additionally recites a shaft having *a first longitudinal portion disposed externally* of the valve and *a second longitudinal portion disposed internally* of the valve. Because claim 1 is the same in scope as original claim 3, which was indicated to be allowable, Applicant submits that

claim 1 and all claims dependent thereon are now allowable. Applicant therefore requests reconsideration and withdrawal of the rejection.

Claims 14, 15, and 18 stand rejected under 35 U.S.C. §102(b) as anticipated by Scobie et al. (U.S. Patent No. 4,659,064.) Applicant respectfully traverses these rejections.

In accordance with the Examiner's recommendations regarding allowable subject matter, independent claim 14 is amended to include the limitations of original dependent claims 15 and 17.

As a result, amended independent claim 14 (which is actually the same in scope as original claim 17) recites a rotary valve comprising a *shaft having a first longitudinal portion rotationally locked to a disc* and a second longitudinal portion disposed externally of the valve body such that the provided first and second guide structures extend inwardly into the valve body and recites that the *first longitudinal portion of said shaft rotatably extend[s] through one of the first and second guide structures such that the guide structures function to hold said disc in a precisely centered orientation* within said interior of said valve body.

Because claim 14 is the same in scope as original claim 17, which was indicated to be allowable, Applicant submits that claim 14 and all claims dependent thereon are now allowable. Applicant therefore requests reconsideration and withdrawal of the rejections.

### III. 35 U.S.C. §103 REJECTIONS

Applicant respectfully traverses the rejections of claim 5 (as obvious over Hubertson), claims 6, 7, and 10 (as obvious over Hubertson in view of Scobie et al.), claims 11-13 (as obvious over Hubertson in view of Bylsma, U.S. Patent No. 4,181,288), and claims 19-22 as obvious over Hubertson in view of Bylsma. Applicant respectfully requests reconsideration and withdrawal of these rejections.

Applicant submits that the foregoing amendments to claim 1 have rendered the rejections of dependent claims 5, 6, 7, and 10-13 moot, as each of

these claims now depends from an allowable claim. As such, these rejections should be withdrawn.

In addition, independent claim 19 is amended to incorporate the subject matter from original claims 15 and 17. Applicant submits, therefore, that claim 19 and each of dependent claims 20-22 is allowable for the reasons indicated by the examiner in the Office Action with respect to original claim 17.

Applicant respectfully submits that the amendments and the remarks presented herein place the application in condition for allowance. If necessary to grant an allowance in this case, Applicant grants the Examiner permission to cancel withdrawn claims 23-32 in an Examiner's Amendment.

#### IV. CONCLUSION

For the reasons stated above, Applicant submits that the specification and claims are in proper form and clearly define patentable subject matter with respect to the prior art. If there are any additional fees or refunds required, the Commissioner is directed to charge or debit Deposit Account No. 13-2855 of Marshall, Gerstein & Borun LLP.

Respectfully submitted for,

MARSHALL, GERSTEIN & BORUN LLP

February 12, 2004


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Exhibit B

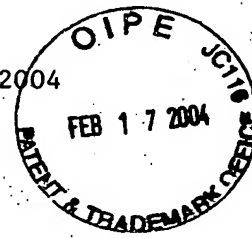
06005/38302B

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13



Exhibit C



PATENT  
06005/38302B

**IN THE UNITED STATES PATENT  
AND TRADEMARK OFFICE**

Applicant: Eggleston

Serial No.: 10/005,534

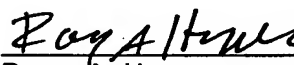
Filed: NOVEMBER 8, 2001

Title: ROTARY VALVE APPARATUS

Group Art Unit: 3676

Examiner: PEAHEY, ENOCH E.

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) 1450, Alexandria, VA 22313-1450,  
) on February 12, 2004.

)   
) Roger A. Heppermann  
) Reg. No. 37,641  
) Attorney for Applicant

**AMENDMENT IN RESPONSE TO THE  
OFFICE ACTION DATED NOVEMBER 13, 2003**

Mail Stop Non Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This Amendment is in response to the Office Action mailed on November 13, 2003.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this Amendment.

Remarks begins on page 10 of this Amendment.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A rotary valve comprising:  
a valve body;  
a seal structure, carried by said valve body [[, for forming an elliptical seating surface]], said seal structure including opposing first and second annular seal cartridge members and a resilient annular seal to form a seating surface wherein the first and second seal cartridge members form a cavity to receive said resilient annular seal such that said annular seal inwardly protrudes from said cavity, said cavity having an elliptical configuration to deform said resilient annular seal to an elliptical shape; [[and]]  
a shaft having a first longitudinal portion disposed externally of said valve, and a second longitudinal portion disposed internally of said valve;  
a disc operably connected to said second longitudinal portion and  
rotatably carried by said valve body [[and]], said disc having an elliptical periphery rotatable into and out of sealing engagement with said seating surface.
2. (Canceled)
3. (Canceled)
4. (Currently Amended) The rotary valve of Claim [[3]] 1 wherein:  
said annular seal member has a radially outer peripheral portion clamped  
between opposing portions of said first and second seal cartridge members.



5. (Original) The rotary valve of Claim 1 wherein:  
said cavity has an elliptical configuration, and  
said annular seal member is of a metal material and is resiliently  
deformable to said elliptical configuration in response to  
engagement by said elliptical periphery of said disc.
6. (Original) The rotary valve of Claim 1 wherein:  
said valve body has an interior, and  
said rotary valve further comprises abutting fixed geometry structures  
carried by said valve body and said disc and functioning to hold  
said disc in a precisely centered orientation within said interior of  
said valve body.
7. (Original) The rotary valve of Claim 6 wherein:  
said disc is rotatable relative to said valve body about an axis, and  
said abutting fixed geometry structures include:  
first and second guide structures spaced apart along said axis, and  
extending inwardly into said interior of said valve body, and  
a mounting structure carried by said disc and having oppositely  
facing surfaces spaced apart along said axis and abutting  
said a first and second guide structures.
8. (Original) The rotary valve of Claim 7 wherein:  
said valve body has an annular shape with diametrically opposite, parallel  
flat areas formed on the exterior periphery thereof and spaced a  
apart along said axis, said flat areas having openings extending  
radially therethrough and removably receiving said first and second  
guide structures, and  
said first and second guide structures have enlarged portions abutting said  
flat areas and preventing further movement of said first and second  
guide structures into said interior of said valve body.

9. (Original) The rotary valve of Claim 7 further comprising:  
a shaft rotatably locked to said disc, said shaft having a longitudinal  
portion rotatably extending through one of said first and second  
guide structures.
10. (Original) the rotary valve of Claim 7 wherein one of said first and second  
guide structures has a portion rotatably coupled to said mounting  
structure.
11. (Original) The rotary valve of Claim 1 further comprising:  
a shaft having a first longitudinal portion extending inwardly through said  
valve body and being rotationally locked to said disc, and a second  
longitudinal portion disposed externally of said valve body and  
being drivingly rotatable to cause a corresponding rotation of said  
disc about said axis, and  
an actuator support structure secured to the exterior of said valve a body  
and being connectable directly to an actuator useable to drivingly  
rotate said second longitudinal portion of said shaft.
12. (Original) The rotary valve of Claim 11 wherein said actuator support  
structure is of a one-piece construction and is removably secured to said  
valve body.

13. (Original) The rotary valve of Claim 12 wherein:

said valve body has a generally annular configuration with a circumferentially spaced pair of flat areas formed on the external a periphery of said valve body on opposite sides of said second longitudinal portion of said shaft, and  
said one-piece actuator support structure has a generally inverted U-shaped configuration with a spaced pair of leg portions with free end a portions removably secured to said flat areas of said valve body, and a closed outer end portion to which a valve actuator may be directly secured.

14. (Currently amended) A rotary valve comprising:

a valve body having an interior;  
a seal structure carried by said valve body and defining a seating surface;  
a disc carried within said valve body interior for rotation relative to said valve body about an axis and having a periphery rotatable into and out of sealing engagement with said seating surface; [[and]]  
a shaft having a first longitudinal portion rotationally locked to said disc, and a second longitudinal portion disposed externally of said valve body; and  
abutting fixed geometry structures carried by said valve body and said disc including first and second guide structures spaced apart along said axis and extending inwardly into said interior of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures such that said first longitudinal portion of said shaft rotatably extends through one of said first and second guide structures wherein said guide structures [[and functioning]] function to hold said disc in a precisely centered orientation within said interior of said valve body.

15. (Canceled)
16. (Currently Amended) The rotary valve of Claim ~~[[15]]~~ 14 wherein:  
said valve body has an annular shape with diametrically opposite, parallel  
flat areas formed on the exterior periphery thereof and spaced apart  
along said axis, said flat areas having openings extending radially  
therethrough and removably receiving said first and second guide  
structures, and  
said first and second guide structures have enlarged portions abutting said  
flat areas and preventing further movement of said first and second  
guide structures into said interior of said valve body.
17. (Canceled)
18. (Currently Amended) The rotary valve of Claim ~~[[15]]~~ 14 wherein one of  
said first and second guide structures has a portion rotatably coupled to  
said mounting structure.

19. (Currently Amended) A rotary valve comprising:
- a valve body;
  - a seal structure carried by said valve body and defining a seating surface;
  - a disc rotatably carried by said valve body and having a periphery rotatable into and out of sealing engagement with said seating surface;
  - a shaft having a first longitudinal portion rotationally locked to said disc, and a second longitudinal portion disposed externally of said valve body and being drivingly rotatable to cause a corresponding rotation of said disc; [[and]]
  - abutting fixed geometry structures carried by said valve body and said disc including first and second guide structures spaced apart along said axis and extending inwardly into said interior of said valve body, and a mounting structure carried by said disc having oppositely facing surfaces spaced apart along said axis and abutting said first and second guide structures such that said first longitudinal portion of said shaft rotatably extends through one of said first and second guide structures wherein said guide structures function to hold said disc in a precisely centered orientation within said interior of said valve body; and
  - an actuator support structure secured to the exterior of said valve body and being connectable directly to an actuator useable to drivingly rotate said second longitudinal portion of said shaft.
20. (Original) The rotary valve of Claim 19 wherein said actuator support structure is of a one-piece construction.
21. (Original) The rotary valve of Claim 19 wherein said actuator support structure is removably secured to said valve body.

22. (Original) The rotary valve of Claim 21 wherein:  
said valve body has a generally annular configuration with a  
circumferentially spaced pair of flat areas formed on the external  
periphery of said valve body on opposite sides of said second  
longitudinal portion of said shaft, and  
said one-piece actuator support structure has a generally inverted U-  
shaped configuration with a spaced pair of leg portions with free  
end portions removably secured to said flat areas of said valve  
body, and a closed outer end portion to which a valve actuator may  
be directly secured.
23. (Withdrawn) A method of constructing a seal cartridge for a rotary valve,  
said method comprising the steps of:  
providing a first seal cartridge member having a side transverse to and  
circumscribing a first axis;  
exerting and maintaining on said first seal cartridge member oppositely  
directed forces resiliently deforming it along a second axis  
transverse to said first axis;  
forming on said side of the resiliently deformed first seal cartridge member  
a circularly configured depression circumscribing said first axis;  
terminating said forces to permit the resiliently deformed first seal  
cartridge member to return to its original shape and thereby cause  
said circularly configured depression to assume an elliptical shape;  
and  
inserting an annular seal member in the elliptically shaped depression.
24. (Withdrawn) A seal cartridge constructed by the method of Claim 23.

25. (Withdrawn) The method of Claim 23 further comprising the steps of:  
providing a second seal cartridge member, and  
  
sandwiching said seal member between said first and second seal a  
cartridge members.
26. (Withdrawn) A seal cartridge constructed by the method of Claim 25.
27. (Withdrawn) The method of Claim 23 wherein:  
said annular seal member has a circular shape, and  
said inserting step is performed in a manner causing the seal member to  
be deformed to an elliptical shape within said depression.
28. (Withdrawn) A seal cartridge constructed by the method of Claim 27.
29. (Withdrawn) The method of Claim 27 wherein said step of inserting an  
annular seal member is performed using an annular seal member having  
an elastomeric body portion.
30. (Withdrawn) A seal cartridge constructed by the method of Claim 29.
31. (Withdrawn) The method of Claim 23 wherein said step of inserting an  
annular seal member is performed using an annular metal seal member.
32. (Withdrawn) A seal cartridge constructed by the method of Claim 31.

REMARKS

This Amendment responds to the Office Action dated November 13, 2003. Based upon the foregoing amendments and following comments, Applicant respectfully requests reconsideration and allowance of the pending claims.

To satisfy 37 C.F.R. §1.143, the Applicant provisionally elected for examination on the merits, with traverse, claims 1-22. Applicant asserted in response to the July 22, 2003 Office Action that the Examiner had not provided appropriate explanation regarding the separate classification of the original claims. In the present Office Action, the Examiner has attempted to rebut these assertions and Applicant's objections to the restriction requirement. The Examiner has further stated that there are no allowable generic or linking claims. Subsequently, claims 23-32 were withdrawn from consideration as being drawn to a non-elected species. Accordingly, claims 1-22 are under consideration.

By way of this amendment, claims 2, 3, 15, and 17 are canceled. The subject matter of claims 2 and 3 is incorporated into independent claim 1. The subject matter of claim 15 and 17 is incorporated into independent claim 14. Further, claims 4 and 5 are amended to properly depend from claim 1 and claims 16 and 18 are amended to properly depend from claim 14. Finally, independent claim 19 is amended to better define Applicant's invention. Thus, claims 1, 4-14, 16, and 18-22 are presently pending and at issue in this application. No new matter has been added.

The cancellation of claims 2, 3, 15, and 17 should in no way be construed as an acquiescence to any of the rejections stated in the Office Action. These claims are cancelled solely to expedite the prosecution of the present application. Additionally, Applicant does not intend to abandon the scope of the non-elected claims as originally filed or as withdrawn by the Examiner in the present Office Action, but may pursue the remaining claims, either by petition for further review or in a divisional application.



**I. 35 U.S.C. §112 REJECTION**

Claim 5 stands rejected under 35 U.S.C. §112 as indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the pending Office Action alleges that there is insufficient antecedent basis for the limitation "said cavity" in line 2 of the claim 5. Claim 1, from which claim 5 depends, is amended to provide proper antecedent basis for the limitation "said cavity" within claim 5. Applicant respectfully submits, therefore, that claim 5 is now in proper form and requests reconsideration and withdrawal of the rejection.

**II. 35 U.S.C. §102(b) REJECTIONS**

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as anticipated by Hubertson (U.S. Patent No. 4,286,769.) Applicant respectfully traverses these rejections.

As an initial matter, Applicant is appreciative of the recognition by the Examiner for his indication of the allowability of claims 3, 4, 8, 9, 16, and 17 if rewritten according to the recommendations stated in the Office Action. The Office Actions states "the prior art of record does not disclose or suggest deforming the annular seal into an elliptical seal by placing it into [an] elliptical cavity of a seal structure...." In accordance with the Examiner's recommendations, independent claim 1 is amended to include the limitations of original dependent claims 2 and 3. Claims 2 and 3 are canceled.

As a result, independent claim 1 (which is actually the same in scope as original claim 3) now recites a rotary valve containing a seal structure including *opposing first and second annular seal cartridge members and a resilient annular seal* such that the cavity formed by opposing first and second annular seal cartridge members provides *an elliptical configuration to deform said resilient annular seal to an elliptical shape* and additionally recites a shaft having *a first longitudinal portion disposed externally* of the valve and *a second longitudinal portion disposed internally* of the valve. Because claim 1 is the same in scope as original claim 3, which was indicated to be allowable, Applicant submits that

claim 1 and all claims dependent thereon are now allowable. Applicant therefore requests reconsideration and withdrawal of the rejection.

Claims 14, 15, and 18 stand rejected under 35 U.S.C. §102(b) as anticipated by Scobie et al. (U.S. Patent No. 4,659,064.) Applicant respectfully traverses these rejections.

In accordance with the Examiner's recommendations regarding allowable subject matter, independent claim 14 is amended to include the limitations of original dependent claims 15 and 17.

As a result, amended independent claim 14 (which is actually the same in scope as original claim 17) recites a rotary valve comprising a *shaft having a first longitudinal portion rotationally locked to a disc* and a second longitudinal portion disposed externally of the valve body such that the provided first and second guide structures extend inwardly into the valve body and recites that the *first longitudinal portion of said shaft rotatably extend[s] through one of the first and second guide structures such that the guide structures function to hold said disc in a precisely centered orientation* within said interior of said valve body.

Because claim 14 is the same in scope as original claim 17, which was indicated to be allowable, Applicant submits that claim 14 and all claims dependent thereon are now allowable. Applicant therefore requests reconsideration and withdrawal of the rejections.

### III. 35 U.S.C. §103 REJECTIONS

Applicant respectfully traverses the rejections of claim 5 (as obvious over Hubertson), claims 6, 7, and 10 (as obvious over Hubertson in view of Scobie et al.), claims 11-13 (as obvious over Hubertson in view of Bylsma, U.S. Patent No. 4,181,288), and claims 19-22 as obvious over Hubertson in view of Bylsma. Applicant respectfully requests reconsideration and withdrawal of these rejections.

Applicant submits that the foregoing amendments to claim 1 have rendered the rejections of dependent claims 5, 6, 7, and 10-13 moot, as each of

these claims now depends from an allowable claim. As such, these rejections should be withdrawn.

In addition, independent claim 19 is amended to incorporate the subject matter from original claims 15 and 17. Applicant submits, therefore, that claim 19 and each of dependent claims 20-22 is allowable for the reasons indicated by the examiner in the Office Action with respect to original claim 17.

Applicant respectfully submits that the amendments and the remarks presented herein place the application in condition for allowance. If necessary to grant an allowance in this case, Applicant grants the Examiner permission to cancel withdrawn claims 23-32 in an Examiner's Amendment.

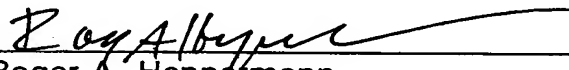
#### IV. CONCLUSION

For the reasons stated above, Applicant submits that the specification and claims are in proper form and clearly define patentable subject matter with respect to the prior art. If there are any additional fees or refunds required, the Commissioner is directed to charge or debit Deposit Account No. 13-2855 of Marshall, Gerstein & Borun LLP.

Respectfully submitted for,

MARSHALL, GERSTEIN & BORUN LLP

February 12, 2004

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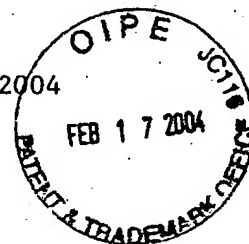
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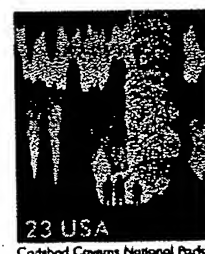
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MARSHALL GERST



Exhibit D

**MARSHALL, GERSTEIN & BORUN LLP**

ATTORNEYS AT LAW

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## Michelle McDonald

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